

VOLKOVA, N.A.

Phytoplankton of ancient sediments in the northwestern  
Moscow region and its significance for stratigraphy.

Izv. AN SSSR. Ser. geol. 29 no.4:74-84 Ap'64.

(MIRA 17:5)

1. Geologicheskii institut AN SSSR, Moskva.

KIRSANOVA, G.A.; PURUSOVA, G.A.; BELITSIN, M.N., inzh.; VOLKOVA, N.A.,  
inzh.

Assortment of synthetic fibers. Khim.volok. no.6:78 '59.  
(MIRA 13:5)

1. Klinskiy kombinat iskusstvennogo kombinata.  
(Textile fibers, Synthetic--Congresses)

VOLKOVA, N.A.

CHUBINSKIY, S.M.; VOLKOVA, N.A.

Effect of sea baths on heat regulation in neurasthenia. Vop.kur.,  
fizioter. i lech.fiz.kul't. 22 no.3:22-26 My-Je '57. (MIRA 11:1)

1. Iz bioklimaticheskoy laboratorii i nevrologicheskoy kliniki  
(zav. - prof. K.F.Nikitin) Balneologicheskogo instituta imeni  
I.V.Stalina v Sochi (dir. - dotsent N.P.Vladimirov)  
(NEURASTHENIA) (BODY TEMPERATURE) (BATHS, SEA)

VOLKOVA, N.A.

Pre-Cambrian spores in the Dniester Valley. Dokl. AN SSSR 142  
no.4:893-895 F '62. (MIRA 15:2)

1. Geologicheskii institut AN SSSR. Predstavleno akademikom  
V.N.Sukachevym.

(Dniester Valley—Geology, Stratigraphic)

MALYSHEV, A.I.; NIKOLAYEV, G.N.; SHUVALOV, Yu.A.; SAMOKHOTSKIY,  
A. I., red.; VOLKOVA, N.A., red.; VORONINA, R.K., tekhn.  
red.

[Technology of metals and building materials] Tekhnologiya  
metallov i konstruktsionnye materialy. Moskva, Vysshaya  
shkola, 1963. 429 p. (MIRA 16:7)  
(Metalwork) (Building materials)

TOKAREVA, T.Ye.; SNITSARENKO, L.G.; VOLKOVA, N.A.; BAKSHT, O.V.;  
ZEL'DICH, E.I.; KHEYFETS, F.M.

Formulas and technology for the manufacture of frost-resistant  
boots. Kauch. i rez. 24 no.8:42-44. '65.

(MIRA 18:10)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh  
izdeliy i zavod "Krasnyy bogatyr'.

L 3381-66 EWT(m)/EWP(j)/T RM

ACCESSION NR: AP5022093

UR/0138/65/000/008/0042/0044

44 678.06:685.314.23.002.2 44

AUTHOR: Tokareva, T. Ye.; Snitsarenko, L. G.; Volkova, N. A.; Baksht, O. V.;

Zel'dich, E. I.; Kheyfets, F. M. 44

TITLE: Compounding and technology for manufacturing winter-proof boots

50  
46  
8

SOURCE: Kauchuk i rezina, no. 8, 1965, 42-44

TOPIC TAGS: rubber chemical, antifreeze, synthetic material, butadiene styrene rubber, filler, plasticizer, thermoelasticity, special purpose clothing, 44/  
rubber/SKMS-10 rubber

ABSTRACT: Formulations and technology for making frost-resistant boots which retained their elasticity at -50C were worked out and introduced commercially. Formulations for all parts except the tricot-backed boot tops were based on frost resistant rubber SKMS-10, and natural rubber was used in formulation for fabric application. The antifreeze effectiveness of dibutylphthalate, dibutylsebacinate, MVP oil, "plasticizer" oil and transformer oil was evaluated. The first two compounds gave the best frost-resistance at -50 C, and formulations containing dibutylphthalate had the greatest resistance to aging and became brittle below

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L 3381-66

ACCESSION NR: AP5022093

-65C . Different types of carbon black had little effect on frost-resistance. Manufacturing technology for making frost-resistant regular and fisherman's boots is analogous to that for making ordinary molded boots. Orig. art. has: 2 tables

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy (Scientific Research Institute for Rubber and Latex Products); Zavod "Krasnyy bogatyr" (Krasnyy Bogatyr Plant)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, IE

NR REF SOV: 005

OTHER: 000

Card 2/2



VOLKOVA, N.A.

Nature and classification of the microfossils of Pre-Cambrian  
and Lower-Paleozoic plant origin. Paleont. zhur. no.1:13-25  
'65. (MIRA 18:4)

1. Geologicheskii institut AN SSSR.

ZVEZDIN, Z.K., nauchnyy sotrudnik; BOGACHEVSKAYA, L.S., nauchnyy sotrudnik;  
VOLKOVA, M.F., mladshiy nauchnyy sotrudnik; KIM, M.P., doktor  
istoricheskikh nauk, red.; POLITOV, Z., red.; TYUMBYEVA, A.,  
tekhn.red.

[First steps in the industrialization of the U.S.S.R., 1926-1927]  
Pervye shagi industrializatsii SSSR, 1926-1927 gg. Moskva, Gos.  
izd-vo polit.lit-ry, 1959. 532 p. (MIRA 12:5)

1. Akademiya nauk SSSR. Institut istorii. 2. Tsentral'nyy gosudarstvennyy arkhiv Oktyabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva SSSR (for Zvezdin). 3. Institut istorii AN SSSR  
(for Bogachevskaya, Volkova).  
(Russia--Industries)

VOLKOVA, N.I. (Moskva)

Preventive measures in pitch works. Vol'd. 1 akush. no.6:21-22  
Jo '54. (MLRA 7:7)

(INDUSTRIAL HYGIENE)

\*prev. measures in pitch works)

VOLKOVA, N. I.

VOLKOVA, N. I. -- "Problems of Labor Hygiene in the Production of Pitch Coke." Min Health USSR. Central Inst for the Advanced Training of Physicians. Moscow, 1955. (Dissertation for the Degree of Candidate of Medical Sciences.)

SO: Knizhnaya letopis', No. 4, Moscow, 1956

VOLKOVA, N.I., nauchnyy sotrudnik; KANDAUROVA, Ye.I., nauchnyy sotrudnik

Sanitary and hygienic aspects of working conditions on tractors and combines with combustion and electric motors. Gig. i san. 21 no.4: 22-27 Ap '56. (MLRA 9:7)

1. In Nauchno-issledovatel'skogo sanitarnogo instituta imeni  
Mrismana

(AGRICULTURE

hyg. aspects of operation of tractors with electric &  
combustion motors (Rus))

VOLKOV, N. I.

137-58-1-2184

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 296 (USSR)

AUTHOR: Volkova, N. I.

TITLE: Certain Problems of Labor Hygiene when Radioactive Isotopes are Used in Iron and Steel Metallurgy (Nekotoryye voprosy gigiyeny truda pri primenenii radioaktivnykh izotopov v chernoy metallurgii)

PERIODICAL: Gigiyena truda i prof. zabolevaniya, 1957, <sup>1/1</sup> Nr 2, pp 30-34

ABSTRACT: The employment of radioactive isotopes (RI) in iron and steel production, and the harmful effect thereof on the health of the workers are examined. The following preventive measures are recommended: prohibition of unpacking of RI under factory conditions; a simplified ampoule design to facilitate unpacking; isolation for 40 days of open-hearth furnace slag containing radioactive isotopes; identification of metal containing RI.

Ye. L.

1. Isotopes (Radioactive)--Physiological effects 2. Isotopes (Radioactive)--Safety measures

Card 1/1

*Inst. Labor Hygiene & Occupational Diseases  
Acad Med Sci USSR*

~~VOLKOV, M.I.~~ VERSHININ, N.I.

Hygiene Section of the All-Union Conference on Medical Radiology.  
Med.rad. 2 no.2:88-91 Nr-Apr '57. (MLRA 10:7)  
(RADIOLOGY--HYGIENIC ASPECTS)

VOLKOV, H. I.

Section of Radiation Hygiene at the republic session of hygienic  
institutes at the Erismen Institute, Med.rad. 2 no.2:91-92

Mr-Apr '57.

(MLRA 10:7)

(RADIOLOGY--HYGIENIC ASPECTS)

10/15



POPOV, E.L.; VOLKOVA, N.I.; KORESHKOV, G.Z.

The effect of the residual concentration of sulfuric acid after leaching on copper cementing and its losses with tailings in the Mostovich process. Izv. AN UzSSR. Ser. tekhn. nauk 8 no. 6. 74-77 (MIRA 18:3) '64.

1. Sredneaziatskiy filial Gosudarstvennogo nauchno-issledovatel'skogo instituta tsvetnykh metallov.

**VOLKOVA, N.K.**  ~~Kandidat sel'skokhozyaystvennykh nauk.~~

Inheritance of the qualities and characters of the Aport variety  
in hybrid progeny and their variation due to the mentor effect.  
Agrobiologiya no.5:62-69 S-O '56. (MLRA 9:11)

1. Eksperimental'naya baza Instituta zemledeliya Kazakhskogo  
filiala Vsesoyuznoy Akademii sel'skokhozyaystvennykh nauk imeni  
Lenina, stantsiya Talgar, Alma-Atinskoy oblasti.  
(Alma-Ata Province--Apple) (Hybridization, Vegetable)

VOLKOVA, N.M., podpolkovnik meditsinskoy sluzhby

Diffuse infiltrations of the lungs. Voen.-med.zhurn. no.7:  
74-75 J1 '59. (MIRA 12:11)  
(LUNGS--DISEASES)

VOLKOVA, N.M.

Legal medical evaluation of fractures of the arm and of the bones  
of the forearm. Zdravookhraneni 4 no. 2:31-33 My-Ap '61.  
(MIRA 14:4)

1. Iz kafedry sudebnoy meditsiny (zav. dotsent P.G. Areshev)  
i kafedry obshchey khirurgii (zav. - prof. N.L. Gladyshevskiy)  
Kishinevskogo meditsinskogo instituta.  
(EXTREMITIES, UPPER—FRACTURE)

21146

18-3100 1087, 1208, 1454

S/200/61/000/002/001/001  
D229/D301

AUTHORS: Gaydukov, G.V., and Volkova, N.M.

TITLE: Production of cast vanadium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Sibirskoye otdeleniye,  
no. 2, 1961, 43-49

TEXT: In the production of ductile vanadium, the competing processes consist of reducing vanadium trichloride with magnesium,  $V_2O_5$  and  $V_2O_3$  with calcium as cited by U. Rostoker (Ref. 1: Metallurgiya vanadiya (Metallurgy of Vanadium), pod red. Ye.M. Savitskogo, IL, M, 1959) and  $V_2O_3$  with carbon in vacuo as cited by A.Yu. Polyakov (Ref. 2: Osnovy metallurgii vanadiya (Principles of Vanadium Metallurgy), Metallurgizdat, M. 1959). One of the principal drawbacks of these methods is that vanadium is obtained in powder form, in granules of various sizes and in sponge form (by the last

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D229/D301

Production of cast vanadium

method) and conversion of these into compact metal requires long heat treatment or high melting in vacuo. The advantage of thermal calcium reduction of vanadium oxides is that it cuts down subsequent steps and being an exothermic reaction it provides most of the heat required. The process was investigated and perfected by Marden and Rich [Abstractor's note: Names taken from Russian], who, in order to increase the solubility of slag, added to it 1 mole of  $\text{CaCl}_2$  per every mole of  $\text{CaO}$  formed. R. McKechnie and A.U. Seybolt

(Ref. 3: Preparation of ductile vanadium by calcium reduction. J. Chem. Soc. 97, 311, 1950) by means of iodine addition kept the reduction temperature at the melting point of vanadium. The extraction was 74 % and metal purity 99.5 %. The process is uneconomical and of poor efficiency. H.A. Wilhelm and I.R. Long (Ref. 4: Am. Pat. 2700606, 1955) solved the problem by using a comparatively inexpensive sulphur instead of iodine. The authors point out that they have already used calcium sulphide thermit method for reducing titanium, niobium and vanadium oxides. The present report deals

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with the use of this method for producing cast vanadium. From consideration of the free energy changes for reducing vanadium oxides to vanadium, an effective reducing agent -- for instance metallic calcium -- is needed. Fig. 1 shows the change in free energy for the reduction reaction of vanadium oxides. In contrast to carbon, aluminum and silicon, metallic calcium is not soluble in liquid or solid vanadium and the reduction process is, therefore, carried out at higher pressures, under which partial pressure of calcium vapour is appreciable. The presence of oxygen greater than 0.07 %, sulphur 0.010 % and nitrogen 0.03 % in metallic vanadium greatly reduces its malleability, while the metal with low concentration of these impurities is quite malleable (Vickers Hardness less than 150 units). Nitrogen is the principal impurity and this should be removed, and since both metallic calcium and  $V_2O_5$  contain nitrogen, steps must be taken for its removal. To do this calcium is distilled in vacuo ( $10^{-3}$  mm at 865-900°C) as quoted by W.J. McCreary (Ref. 6: High Purity Calcium, J. Metals, 10, 9. 615, 1958) while

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D229/D301

# Production of cast vanadium

V<sub>2</sub>O<sub>5</sub> is partially reduced with hydrogen at 900°C for 3 hours to V<sub>2</sub>O<sub>3</sub> with subsequent vacuum treatment at 450-500°C at  $5 \cdot 10^{-3}$  mm to remove moisture and absorbed hydrogen. Hence, the reagents were of the following purity: V<sub>2</sub>O<sub>3</sub>: V - 63.98-66.45 %; Ti - <0.1 %; Fe, Mg, Ni, Ca, Cu, all 0.1 %; N ≤ 0.003 %; H ≥ 0.008 %; Al < 0.01 %; Si < 0.08 %. Ca: C - 0.003 %; Mg - 0.005 %; Fe - 0.003 %; N<sub>2</sub> - 0.003 %; O<sub>2</sub> - 0.015 %. The powder S was obtained by the thermit method. The reagents in proportion V<sub>2</sub>O<sub>3</sub> : S : Ca = 10 : 3 : 19 were compressed into briquettes (40 x 30 mm) using a pressure of 1200-2400 kg/cm<sup>2</sup>. The charge of 1600-3200 g was placed in a molybdenum reactor inside the steel casing. The reactor was fitted with a dropping funnel and the base of the casing was made of a water-cooled copper plate. The whole apparatus was evacuated to  $10^{-3}$  mm and then filled with purified argon to 1.1 - 1.25 atm. Initial heating to 300-320°C was done to start exothermic reaction of S and Ca. The overall heat of reduction reaction brought the furnace

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D229/D301

# Production of cast vanadium

to 2500°C. The final pressure increased to 8-12 atm. The product of vanadium ingot and slag was crushed and leached with water and 10 % HCl sol. to separate them. The effect of briquetting and the size of charge on metal yield is given in Tables 2 and 3. From the data in Tables 2 and 3 it may be seen that the reduction process is governed largely by the specific heat effect and general equation:  $V_2O_3 + 13 Ca = 2 V + 3 CaO + Q$ . The excess of Ca required is 60 % of the theoretically needed quantity, and sulphur, 1.5 mole per mole of  $V_2O_3$ . In conclusion the authors state that the technology of production of metallic vanadium in the form of ingot has been proposed. The vanadium ingot obtained with the composition V - 98.7 %, O2 - 0.21 %, N2 < 0.035 %, S < 0.05 %, shows an increase in hardness. In order to obtain malleable vanadium required for cold working of metal, further investigation is required, possibly with the use of purer reagents. There are 4 figures, 3 tables and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The

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Production of cast vanadium

S/200/61/000/002/001/001  
D229/D301

references to the three English-language publications read as follows: R. McKechnie, A.V. Seybolt, Preparation of ductile Vanadium by calcium reduction, J. Electrochem. Soc. 97, 311, 1950; H.A. Wilhelm, I.R. Long, Am.pat. 2700606, 1955; W.J. McCreary, High-purity calcium J. of Metals, 10, 9, 615, 1958. ✓

ASSOCIATION: Ural'skiy filial AN SSSR, Sverdlovsk (Ural Branch.  
AS USSR, Sverdlovsk)

SUBMITTED: May 25, 1960

Card 6/6

VOLKOVA, N.M.; GAYDUKOV, G.V.

Process of the aluminum reduction of potassium fluotitanate.  
Izv.Sib.otd.AN SSSR no.4:47-51 '59. (MIRA 12:10)

1. Ural'skiy filial Akademii nauk SSSR.  
(Potassium fluotitanate) (Aluminum)

VOLKOVA, H.M.; GAYDUKOV, G.V.

Some thermodynamic data on potassium fluotitanate.  
Izv. Sib. otd. AN SSSR no.6:70-77 '59.

(MIRA 12:12)

1. Ural'skiy filial AN SSSR.

(Potassium fluotitanate--Thermal properties)

VOLKOVA, N. M., Cand Tech Sci -- (diss) "Investigation of the process for the reduction of potassium fluorotitanates with aluminum," Sverdlovsk, 1960, 12 pp, (Institute of Chemistry, Ural Affiliate of the Academy of Sciences USSR) (KL, 38-60, 107)

PETROVA, Stella Vladimirovna; VOLKOVA, Nina Mikhaylovna; SARANTSEVA,  
L.S., retsenzent; IGNATOVA, G.I., retsenzent; RYCHKOVA,  
O.I., red.

[Technology of the tailoring of men's suits] Tekhnologiya  
poshiva muzhskikh kostiumov. Moskva, Legkaia industriia,  
1964. 269 p. (MIRA 19:1)

VOIKOVA, N.M.; GIL'D, P.V.

Heat of formation of lower vanadium carbides. Izv. vys. ucheb.  
zav.; tsvet. met. 8 no.3:77-81 '65. (X:12:9)

1. Institut khimii Ural'skogo filiala AN SSSR.

L 61077-65 EWA(c)/ENT(m)/ENP(b)/T/ENP(t) IJP(c) JW/JD/JG

ACCESSION NR: AP5018257

UR/0078/65/010/007/1758/1758  
546.881'26

25  
23  
B

AUTHOR: Volkova, N. M.; Gel'd, P. V.; Alyamovskiy, S. I.

TITLE: Phase transformation of higher vanadium carbide

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 7, 1965, 1758

TOPIC TAGS: vanadium carbide, carbide phase transformation

ABSTRACT: In a study of the concentration - temperature dependence of the enthalpy of the phase components in the V - C system, the following interesting fact was observed: the monotonic increase in the  $\Delta H$  of samples of the higher  $\delta'$  carbide ( $VC_{0.889}$ ) at approximately 1120C was replaced by a fairly large jump, after which  $\Delta H$  increased in proportion to the temperature. At 1120C, the  $\delta'$  carbide undergoes a transformation associated with an increase in enthalpy amounting to about 45 kJ/kg (665 cal/mole). The transformation is thought to be polymorphic in character. This is supported by calorimetric observations and the reproducibility of the data. X-ray diffraction analysis of samples annealed and quenched from various temperatures (from 800 to 1700C) showed no

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L 61077-65

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ACCESSION NR: AP5018257

differences in the type or parameter of the lattice ( $a = 4.159 \text{ kX}$ ), excluding the possibility of formation of peritectoid or related transformations. The polymorphic transformation observed should be investigated by direct high-temperature x-ray analyses. Orig. art. has: 1 figure.

ASSOCIATION: Institut khimii Ural'skogo filiala Akademii nauk SSSR (Institute of Chemistry, Ural'sk Branch, Academy of Sciences, SSSR)

SUBMITTED: 07Jan65

ENCL: 00

SUB CODE: IC, KM

NO REF SOV: 001

OTHER: 000

Card

*KC*  
2/2

VOLKOVA, N.M.; GEL'D, P.V.; ALYAMOVSKIY, S.I.

Phase transition of higher vanadium carbide. Zhur. neorg. khim.  
10 no.7:1758 J1 '65. (MIRA 18:8)

1. Institut khimii Ural'skogo filiala AN SSSR.

L 00089-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JW/JG  
 UR/0149/65/000/003/0077/0081  
 669.292

ACCESSION NR: AP5022337

AUTHOR: Volkova, N. M.; Gel'd, P. V.

TITLE: Heats of formation of the lower carbides of vanadium

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 3, 1965, 77-81

TOPIC TAGS: heat of formation, carbide, vanadium, carbon, crystal structure, vanadium pentoxide

ABSTRACT: Starting material for the tests was metallic vanadium purified by electric furnace melting. The impurity content was : 0.03% carbon, 0.03% oxygen, 0.005% nickel, and iron and silicon each less than 0.01%. The lower carbides of vanadium were synthesized at a temperature of 1950 K for fifteen hours from a briquetted mixture of finely ground vanadium oxides and carbon black. Chemical analysis for vanadium was done by combustion at the oxygen point at 1220 K, and for the content of bound carbon by the weight method. The oxygen content was determined by the difference. Heats of combustion and heats of formation from the elements were determined for carbides of vanadium with compositions ranging from  $VC_{0.418}^{0.018}$  to  $VC_{0.898}^{0.006}$  and are shown in tabular form. X-ray

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L 00089-66

ACCESSION NR: AP5022337

analysis showed that, with the same chemical composition, the lower carbides of vanadium can exist with different crystal lattices: hexagonal or rhombic. Study of the heats of combustion of very pure vanadium gave a value of  $77.5 \pm 3$  kilojoules/gram-atom of vanadium for the change in enthalpy during the formation of vanadium pentoxide from its elements. It was established that there is a possibility of a distortion of the hexagonal lattice of the lower carbide of vanadium into a rhombic lattice. Based on the experimental data, the article advances an equation for the dependence of the heat of formation of the carbide from its elements on its chemical composition. Orig. art. has: 6 formulas, 2 figures, and 2 tables

ASSOCIATION: Institut khimii Ural'skogo filiala AN SSSR (Institute of Chemistry of the Ural Branch, AN SSSR)

SUBMITTED: 16Jan64

ENCL: 00

SUB CODE: MM, TD

NR REF SOV: 006

OTHER: 002

Card 2/2

L 61977-65 ENH(c)/ENT(m)/ENP(b)/T/ENP(t) LJP(c) JW/JD/JG

ACCESSION NR: AP5018257

UR/0078/65/010/007/1758/1758  
546.881'26

AUTHOR: Volkova, N. M.; Gel'd, P. V.; Alyamovskiy, S. I.

TITLE: Phase transformation of higher vanadium carbide

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 7, 1965, 1758

TOPIC TAGS: vanadium carbide, carbide phase transformation

ABSTRACT: In a study of the concentration - temperature dependence of the enthalpy of the phase components in the V - C system, the following interesting fact was observed: the monotonic increase in the  $\Delta H$  of samples of the higher  $\delta'$  carbide ( $VC_{0.889}$ ) at approximately 1120C was replaced by a fairly large jump, after which  $\Delta H$  increased in proportion to the temperature. At 1120C, the  $\delta'$  carbide undergoes a transformation associated with an increase in enthalpy amounting to about 45 kJ/kg (665 cal/mole). The transformation is thought to be polymorphic in character. This is supported by calorimetric observations and the reproducibility of the data. X-ray diffraction analysis of samples annealed and quenched from various temperatures (from 800 to 1700C) showed no

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L 61077-65

2

ACCESSION NR: AP5018257

differences in the type or parameter of the lattice ( $a=4.159 \text{ kX}$ ), excluding the possibility of formation of peritectoid or related transformations. The polymorphic transformation observed should be investigated by direct high-temperature x-ray analyses. Orig. art. has: 1 figure.

ASSOCIATION: Institut khimii Ural'skogo filiala Akademii nauk SSSR (Institute of Chemistry, Ural'sk Branch, Academy of Sciences, SSSR)

SUBMITTED: 07Jan65

ENCL: 00

SUB CODE: IC, K4

NO REF 10V: 001

OTHER: 000

Card

2/1

VOLKOVA, N.M. (Sverdlovsk); ALYAMOVSKIY, S.I. (Sverdlovsk); GEL'D, P.V.  
(Sverdlovsk)

Concentration stability limits of vanadium carbide at 1800° C.  
Izv, AN SSSR. Met. i gor. delo no.5:134-140 S-O '63.  
(MIRA 16:11)

VOLKOVA, N. M.

VOLKOVA, N. M.: "Investigation of certain types of contact-free pistons for the tuning of coaxial oscillating systems." Min Higher Education USSR. Leningrad Electrical Engineering Institute V. I. Ul'yanov (Lenin). Chair of "Radio Transmitting Equipment." Leningrad, 1956  
(Dissertation for the Degree of Candidate in Technical Sciences)

So: Knizhnaya letopis', No. 18, 1956



ACC NR: AR6035192

SOURCE CODE: UR/0274/66/000/009/A064/A064

AUTHOR: Volkova, N. N.

TITLE: Quantum precision pulse delay

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 9A483

REF SOURCE: Tr. Leningr. in-t aviats. priborostr., vyp. 45, 1965, 87-93

TOPIC TAGS: quantum number, phase meter, ~~meter~~, pulse delay, quantum physics, *quantum generator, circuit delay*

ABSTRACT: For achieving relative accuracy in pulse delay of the order  $10^{-5}$  a stepped delay can be used instead of a continuous one. Widening of the range of stepped-delay is achieved by using it in combination with continuous delay. The use of a quantum generator permits an accuracy of  $10^{-12}$  to be achieved, which is 5--8 orders above the accuracy of phase-meter delay. For quantum delay the absolute-error constancy is typical. [Translation of abstract]

[NT]

SUB CODE: 20/

Card 1/1

UDC: 621.374.52

**VOLKOVA, N.N.**

**Estimating engine cylinder wear by "lune cutting" method and comparing  
it with other existing methods. Trudy lab.dvig. no.1:114-121 no.1 '55.  
(Automobiles--Engines--Testing) (MIRA 9:9)**

VOLKOVA, N. P. --

"Broadening of the Adaptability of Alfalfa by Its Cultivation and Consequent Cross Pollination on Different Soils in Moscow Oblast." Cand Agr Sci, All-Union Sci Res Inst of Fodder, Moscow, 1953. (RZhBiol, No 3, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions. (10)

SO: Sum. No. 481, 5 May 55

VOLKOVA, N.S.

Changes in the isoelectric point of the acmic parenchyma of stem and the structure of covering tissues in repeated vegetative hybridization of solanaceous plants. Uch.zap.KHGU 46:57-67 '53. (MIRA 11:11)

1. Kafedra darvinizma i genetiki Khar'kovskogo gosudarstvennogo universiteta.  
(Isoelectric point) (Grafting) (Nightshade)

VOLKOVA, N. S. and KARCHISHINA, V. A.

Morphological changes in grafted solanaceous plants and their seed progeny in repeated vegetative hybridization. Uch.zap.KHGU 46:83-95 (MIRA 11:11) '53.

1. Kafedra darvinizma i genetiki Khar'kovskogo gosudarstvennogo universiteta.  
(Nightshade) (Grafting) (Botany--Morphology)

L 28708-65 EWT(d)/EWT(1)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(b)

PF-4 EM/JD/HW

ACCESSION NR: AT5003079

S/2529/63/000/077/0109/0120

27  
26  
C+1

AUTHOR: Volkova, N. S. (Senior lecturer)

TITLE: Some general hypotheses concerning once statically indeterminate girders of type-II minimum volume 26

SOURCE: Kazan, Aviatzionnyy institut. Trudy, no. 77, 1963. Stroitel'naya mekhanika, 109-120

TOPIC TAGS: metal stress, metal deformation, loading potential, elasticity modulus, metal rigidity, indeterminate girder 26

ABSTRACT: This article formulates methods for the design of equally stressed, once statically indeterminate, girders. The author commences by finding the equality which expresses the condition of equal stress of a once statically indeterminate girder. This equality is then realized by three different methods. In Method I, a statically indeterminate girder under constant loading by a vertical displacement of the points, besides the support points, can be reduced to a statically indeterminate girder of type-II minimum volume. This method has three possible cases: 1) A statically indeterminate girder has a "superfluous rod"; 2) A once

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L 28708-65

ACCESSION NR: A75003079

statically indeterminate girder has a superfluous supporting connection; 3) A statically determinate girder is supported by a Sprengel system of triangular or polygonal configuration. In Method II, a once statically indeterminate girder is reduced to a statically indeterminate girder of type-II minimum volume by rotating any conditionally necessary supporting connection. In Method III, a once statically indeterminate girder under constant loading by arbitrary displacement of the points is reduced to a once statically indeterminate girder of type-II minimum volume. Thus, as shown in Figs. 1, 2 and 3, respectively, of the Enclosure, a once statically indeterminate girder under constant loading by vertical, horizontal, or arbitrary displacements of the points, besides the support points, can be reduced to a once statically indeterminate girder of type-II minimum volume. The author concludes by giving two examples of the calculation of once statically indeterminate girders having type-II minimum volume. Orig. art. has: 10 figures, 5 tables and 17 formulas.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' aviation institute)

SUBMITTED: 10Apr61

ENCL: 03

SUB CODE: AS

NO REF SOV: 011

OTHER: 001

Card 2/5

L 28708-65

ACCESSION NR: AT5003079

ENCLOSURE: 01

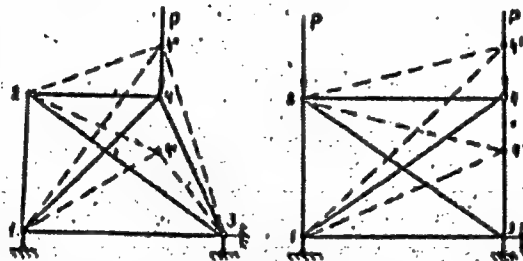


Figure 1. Reduction of a once statically indeterminate girder under constant loading by vertical displacements of the points.

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L 28708-65

ACCESSION NR: AT5003079

ENCLOSURE: 02

0

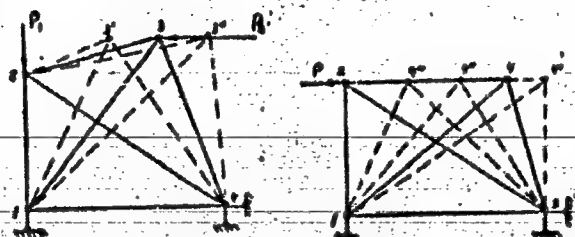


Figure 2. Reduction of a once statically indeterminate girder under constant loading by horizontal displacements of the points.

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L 287C8-65

ACCESSION NR: AT5003079

ENCLOSURE: 03

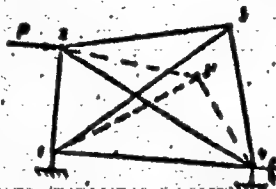


Figure 3. Reduction of a once statically indeterminate girder under constant loading by arbitrary displacements of the points.

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L 28736-65 EWT(d)/EWT(1)/EWT(2)/ENP(w)/ENA(d)/ENP(v)/ENP(t)/ENP(k)/ENP(b) Pf-4

ACCESSION NR: AT5003080 JD/HN/EM S/2529/63/000/077/0121/0129

AUTHOR: Volkova, N. S. (Senior lecturer)

TITLE: Repeatedly statically indeterminate girders of  $(n + 1)$ -type minimum volume

SOURCE: Kazan. AviatSIONnyy institut. Trudy, no. 77, 1963. Stroitel'naya mekhanika, 121-129

TOPIC TAGS: elasticity modulus, metal rigidity, metal stress, metal deformation,  
loading potential, indeterminate girder

ABSTRACT: This article examines the question of the design of uniformly stressed, repeatedly statically indeterminate girders which can preserve the magnitude of their minimum volume during a change of the stresses in their rods. This problem reduces to the calculation of a girder having an  $(n + 1)$ -type minimum volume. The author shows that the problem of finding the conditions for an  $(n + 1)$ -type minimum volume of repeatedly statically indeterminate girders reduces to the solution of a number of once statically indeterminate girders. Hence, repeatedly statically indeterminate girders can be reduced to uniformly stressed, statically indeterminate girders by the same methods as for once statically indeterminate girders:

L 28730-65

ACCESSION NR: AT5003080

1) A repeatedly statically indeterminate girder under constant stress by vertical displacement of the points can be reduced to a repeatedly statically indeterminate girder of  $(n + 1)$ -type minimum weight, as shown in Fig. 1 of the Enclosure; 2) A repeatedly statically indeterminate girder can be reduced to a repeatedly statically indeterminate girder of  $(n + 1)$ -type minimum volume by rotating any conditionally necessary supporting connection, as shown in Fig. 2 of the Enclosure; 3) A repeatedly statically indeterminate girder under constant stress by arbitrary displacement of the points can be reduced to a repeatedly statically indeterminate girder of  $(n + 1)$ -type minimum volume, as shown in Figs. 3a and 3b of the Enclosure. It is concluded that any statically indeterminate girder can be reduced to a uniformly stressed statically indeterminate girder in which the stresses in all rods can be nonvanishing. Orig. art. has: 7 tables, 7 figures, and 10 formulas.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' aviation institute)

SUBMITTED: 01Apr61

ENCL: 03

SUB CODE: AS

NO REF SOV: 002

OTHER: 000

Card 2/8

GULYAYEV, A.P., doktor tekhn.nauk; MITROMANOV, A.A., kand.tekhn.  
nauk; VOLKOVA, M.A., inzh.

Quality of oxygen-blown rimmed steel produced in converters.  
Stal' 20 no.8:741-745 Ag '60. (MIRA 13:7)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii.

(Bessemer process--Quality control)  
(Oxygen--Industrial applications)

VOLKOVA, M. A., Cand. Medic. Sci. (diss) "On Leukemic Reactions,"  
Moscow, 1961, 22 pp. (Moscow Medic. Stomatological Inst.) 200  
copies (KL Supp 12-61, 284).

VOLKOVA, M.A.

Leukemoid reactions in so-called collagen diseases. Sov.med. 25  
no.4:70-79 Ap '61. (MIRA 14:6)

1. Iz gospi'tal'noy terapevticheskoy kliniki (zav. - deystvitel'nyy  
chlen AMN SSSR prof. A.A.Bagdasarov) pediatricheskogo fakul'teta  
II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova,  
(COLLAGEN DISEASES) (LEUKEMIA)

VOLKOVA, M. A.

Leukemoid reactions. Terap. arkh. 33 no.5:96-102 My '61.  
(MIRA 14:12)

1. Iz kafedry gosspital'noy terapii (i. o. zav. - dotsent Ye. V. Kasatkin) pediatricheskogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova.

(BLOOD-DISEASES)



VOIKOVA, M.A., dots.

Development of the tuberculosis process after accidental trauma.  
Sov.med. 22 no.5:113-115 My '58 (MIRA 11:7)

1. Iz Irkutskogo oblastnogo protivotuberkuleznogo dispansera.  
(WOUNDS AND INJURIES, compl.  
posttraum. local tuberc. process (Rus))  
(SKIN TUBERCULOSIS, CUTANEOUS, etiol. & pathogen.  
relation to trauma (Rus))

S/598/62/000/007/008/040  
D267/D307

AUTHORS: Pylayeva, Ye. N. and Volkova, M. A.

TITLE: Solubility of silicon in  $\alpha$ -titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye  
splavy, 74-77

TEXT: Seven compositions of binary alloys (Si content range 0.1 - 2 wt-%) were investigated at 850, 800 and 600°C, using the methods of micro-structural analysis and hardness. The alloys obtained by levitation melting were subsequently heat treated. It was found that the solubility of Si in Ti amounts to 0.40 wt-% at 850°C, 0.35 wt-% at 800°C, and 0.30 wt-% at 600°C. The presence of the compound  $Ti_5Si_3$  in alloys with 0.5, 0.75 and 1% Si was borne out by the phase analysis of intermetallic compounds. The increase of Si content increases the hardness and strength of the alloy, with a simultaneous reduction of plasticity. There are 4 figures and 2 tables.

Card 1/1

<sup>28693</sup>  
S/598/62/000/007/011/040  
D244/D307

18, 1285

AUTHORS: Kornilov, I. I., Pylayeva, Ye. N. and Volkova, M. A.

TITLE: Properties of the alloys of the ternary titanium-aluminum-vanadium system

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye splavy, 89-94

TEXT: The work is a continuation of previous investigations of Ti-Al and Ti-Al-Fe alloys. In this investigation the heat stability of Ti rich alloys of ternary system Ti-Al-V was investigated. Microstructure of the alloys at 600°C included either one  $\alpha$ -phase or two phases  $\alpha$  and ( $\alpha + \beta$ ). The alloy with 7.5% Al and 0.5% V had a single phase structure of  $\alpha$ -solid solution and the alloy with 7.5% Al and 4% V consisted of ( $\alpha + \beta$ ) phases. The heat stability was determined by the method of centrifugal bending under a tension of 15 kg/mm<sup>2</sup> at 550°C. For alloys containing 5% Al, additions of V from 0.5 to 1% did not decrease their heat stability. Further in-

Card 1/2

Properties of the alloys ...

S/598/62/000/007/011/040  
D244/D307

Increases of V from 5 to 10% led to the formation of two phases  $\alpha$  -  $\beta$ , which decreased the heat stability. Influence of V on the alloys with 7.5% Al was similar. A number of alloys was prepared by powder metallurgy and tested for heat stability. The most heat-stable alloys contained 10% Al and 30% V or 15% Al and 15% V. It was shown that the addition of Al (0 - 15%) to the alloys with a constant content of V (2, 3, 4, 5%) increased their heat stability. There are 7 figures. ✓

Card 2/2

<sup>38697</sup>  
S/598/62/000/007/018/040  
D290/D307

12 12 25

AUTHORS: Kornilov, I. I., Mikheyev, V. S., Pylayeva, Ye. N., Vol-  
kova, M. A., Borok, B. A., Shchegoleva, R. P. and Golu-  
jeva, L. S.

TITLE: The effect of aluminum on the structure and properties of  
a Ti-Al-Cr-Fe-Si-B alloy prepared by powder metallurgy

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye  
splavy, 130-134

TEXT: The authors studied the effect of varying amounts of Al in  
Ti-Al alloys (1 - 7% by weight Al) and in alloys of the Ti-Al-Cr-  
Fe-Si-B system (1.5 - 12% by weight Al) on the structure and pro-  
perties of the alloys. Strength of the Ti-Al alloys increased from  
77.2 to 107-3 kg/mm<sup>2</sup> as the Al content rose from 0 to 7%; the  
strength of alloy AT4 (AT4) increased from 104 to 142 kg/mm<sup>2</sup> as the  
Al content rose from 1.5 to 10%. Plasticities of the alloys de-  
creased and the heat resistance of AT4 increased as the aluminum

Card 1/2

The effect of aluminum ...

S/598/62/000/007/018/040  
D290/D307

contents became higher. The rate of oxidation of AT4 in air at 700°C decreases by about 60% as the Al content rose from 5 to 12% by weight. There are 4 figures and 4 tables.

Card 2/2

<sup>3 8698</sup>  
S/598/62/000/007/019/040  
D290/D307

18.12.85

AUTHORS: Kornilov, I. I., Pylayeva, Ye. N., Volkova, M. A.,  
Borok, B. A., Shchegoleva, R. P. and Golubeva, L. S.

TITLE: The effect of silicon on the properties of a 6-component  
alloy of the system Ti-Al-Cr-Fe-Si-B prepared by powder  
metallurgy

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye  
splavy, 136-139

TEXT: The authors studied the effect of varying amounts of silicon  
in Ti-Si alloys and in alloys of the system Ti-Al-Cr-Fe-Si-B on  
the properties of the alloys, in order to find the optimum Si con-  
centration in alloy AT4 (AT4). The mechanical properties were mea-  
sured in both the forged and hot worked conditions. The strength  
of the Ti-Si alloy increased from 77.2 to 100.8 kg/mm<sup>2</sup> as the Si  
content increased from 0 - 2% while the strength of the alloy AT4  
increased from 110 to 138 kg/mm<sup>2</sup> with the addition of 1.5% Si. Pla-

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The effect of silicon ...

S/598/62/000/007/019/040  
D290/D307

sticities of the alloys decreased with rising Si content. AT4 containing 0.5% Si withstands a continuous stress of 30 kg/mm<sup>2</sup> at 500°C for about 100 hours. The corrosion resistance of AT4 at 700°C is approximately doubled by the addition of 0.5% Si. There are 4 figures and 4 tables.

X

Card 2/2



VOLKOVA, M.A.

New source of carbonated water spring. Priroda 50 no.4:105 Ap  
1961. (MIRA 14:4)

1. Vostochno-Sibirskiy geologicheskii institut Sibirskogo otdele-  
niya AN SSSR, Irkutsk.  
(Kozhanovo (Krasnoyarsk Territory)--Mineral waters)

) Titanium and Its Alloys (Cont.)

AB-1

decrease in lattice parameter. 4) Formation of the omega phase during the decomposition of the beta phase causes an increase in hardness in the investigated alloys, and is also the cause of brittleness observed in alloys containing 5.42-6.93 percent of Mn after heating in the 500-200° range, with holding times of 6-16 hours. Precipitation of the alpha phase is accompanied by a drop in hardness. There are 8 figures, 2 tables, and 5 references (1 Soviet and 4 English).

Kornilov, I.I., P.B. Budberg, M.A. Volkova, V.F. Prokhanov, Ye.N. Pylayeva (Institute of Metallurgy, USSR Academy of Sciences) Development of a Method for the Hot Compaction of Titanium and Titanium-Alloy Powders

25

The purpose of this investigation was to develop a satisfactory method of hot-compacting titanium powder. The authors first attempted hot compaction with graphite compression molds, which, however, proved unsatisfactory because the titanium reacts with the graphite and the molds can be used only once. The authors therefore used a new complex nickel alloy [composition not given] developed at the Institute of Metallurgy at the USSR Academy of Sciences in 1953-54. This alloy is some 40-50 times stronger than pure Ti at 950-1000° C. The alloy can therefore be recommended as

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## 1 Titanium and Its Alloys (Cont.)

AB-1

a material for compression molds for hot compaction of powdered Ti, Be, Zr, Ni, Fe, Th, U, and other metals. Compression molds of the new alloy were made in the following shapes and sizes: 1) cylindrical, with 15-mm diameter, 20-mm height, and 15-g weight; (2) cylindrical, with 45-mm diameter, 60-mm height, and approximately 400-g weight; (3) rectangular, 6x6x60 mm, 10 g in weight. These molds were designed by one of the authors (V.F. Prokhanov). A study was made of the effect of temperature, specific pressure, and duration of hot compaction on the density and hardness of the compact. Hot compaction of CaH<sub>2</sub>-reduced and Mg-reduced Ti was carried out at 800°, 850°, and 900° C, at a specific pressure of 15 kg/mm<sup>2</sup>, and for periods of 0.5 to 30 minutes. An investigation was also made of the hot compaction of Ti alloys containing 5 percent and 7.5 percent of Al. These tests were carried out at a temperature of 850° and at a specific pressure of 15 kg/mm<sup>2</sup> after preliminary sintering at 1000°. Conclusions. 1) The new heat-resistant nickel alloy may be used for making compression molds intended for hot compaction of metal powders at temperatures of 800-1000° C and at a specific pressure of 12-15 kg/mm<sup>2</sup>. 2) It was established that the theoretical density of Ti is achieved by hot compaction

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# Titanium and Its Alloys (Cont.)

AB-1

with a specific pressure of 15 kg/mm<sup>2</sup> at 900° after 10 minutes, at 850° after 20 minutes, and at 800° after 30 minutes. 3) In the case of powdered titanium-aluminum alloys containing 5 percent and 7.5 percent of aluminum, hot compaction at 850° with a specific pressure of 15 kg/mm<sup>2</sup> for a period of 20 minutes is sufficient to obtain a density equal to 98 percent of the theoretical density of the alloys. 4) The proposed method of hot compaction may be used for other powdered metals (Zr, Be, Th, U, Fe, etc.) and for their alloys. There are 5 figures, 3 tables, and 10 references (8 English and 2 German).

Savitskiy, Ye.M., M.A. Tylkina, A.N. Turanskaya (Institute of Metallurgy, USSR Academy of Sciences) Recrystallization Diagrams of Titanium and Its Alloys

33

The aim of this investigation, conducted in 1954-55, was to study the process of recrystallization of titanium of various degrees of purity and of its alloys under conditions of various types of deformation and to construct two types of three-dimensional diagrams of the recrystallization process. Type I diagrams show the relationship between grain size, the degree of cold working, and the temperature of subsequent annealing, and can be used in establishing correct conditions for the annealing of semifinished

Card 9/43

VOLKOVA, M.A., referent

Effect of hydrogen on the properties of converter steel smelted with  
a mixture of oxygen and hydrogen vapor (from "Stahl und Eisen"  
no.26, 1957) Stal' 18 no.11:1037-1038 N '58. (MIRA 11:11)  
(Steel--Metallurgy) (Steel--Hydrogen content)

VOLKOVA, M.A.

18(2)

PHASE I BOOK EXPLOITATION

SOV/1200

Akademiya nauk SSSR. Institut metallurgii

Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and Its Alloys; Metallurgy and Physical Metallurgy) Moscow, Izd-vo AN SSSR, 1958. 209 p. 4,000 copies printed.

Resp. Ed.: Ageyev, N.V., Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: Rzhiznikov, V.S.; Tech. Ed.: Kiseleva, A.A.

PURPOSE: This book is intended for metallurgists, machine designers, and scientific and industrial personnel working on the development of titanium as an industrial metal.

COVERAGE: The book deals with the following: methods of welding and soldering commercial titanium; mechanical properties of titanium weldments; crystal growth and structural changes occurring during welding; recrystallization diagrams of titanium and its alloys; a metallographic method of determining the degree of contamination of titanium and its alloys by oxygen and nitrogen; plasticity of titanium alloys; industrial methods of rolling titanium and

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Titanium and Its Alloys (Cont.)

SOV/1200

titanium-alloy sheets and strips; forming of titanium and its alloys; diffusion saturation of titanium; oxidation of titanium and its alloys at elevated temperatures. No personalities are mentioned.

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Titanium and Its Alloys (Cont.)

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Titanium and Its Alloys (Cont.)

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Titanium and Its Alloys (Cont.)

SOV/1200

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AVAILABLE: Library of Congress

GO/atr  
2-21-59

Card 6/6

MITROPANOV, A.A., kand.tekhn.nauk; VOLKOVA, M.A., inzh.; LETCHFORD,  
M.I., inzh.; MOCHALOV, G.N., inzh.

Use of converter steel in the automobile industry. Metalloved.  
1 tem. obr. met. no. 11:46 N '60. (MIRA 13:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii, Gor'kovskiy avtomobil'nyy zavod i Avtomobil'nyy  
zavod imeni Likhacheva.  
(Steel, Automobile)

18.1285

also 1555

21568

S/020/61/137/003/018/030  
B103/B208

AUTHORS: Grum-Grzhimaylo, N. V., Kornilov, I. I., Pylayeva, Ye. N.,  
and Volkova, M. A.

TITLE: Metallic compounds in the range of solid  $\alpha$ -solutions of  
the system titanium-aluminum

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 3, 1961, 599-602

TEXT: The authors proved (Ref. 6: Tr. inst. metallurgii AN SSSR, no. 2, 1957) that in titanium - aluminum alloys (7.5-20 wt% Al) the resistance to creeping in bending deformation by the centrifugal method rapidly increases as plasticity decreases. They point out that such a change of properties in the range of solid solutions of the binary system Ti - Al could not be explained by conventional methods of metallographic analysis. X

The objectives of the present study were therefore the following:

- 1) investigation of the range of solid  $\alpha$ -solution in the Ti - Al system;
- 2) determination of the nature of phases appearing in it by measuring the Hall effect as a function of the composition of the alloys. The authors have previously proved (Ref. 9: ZhNKh, 2, no. 10, 1957; Ref. 10: ibid,

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S/020/61/137/003/018/030  
B103/B208

Metallic compounds in the range of ...

31, no. 9, 1956) that the galvanomagnetic effects are related to the composition of various alloys in a way that salient points and jumps appear in the diagram composition-versus-Hall effect. This phenomenon can be explained by the fact that the electron states in the outer atomic shells are changed by applying a magnetic field. This affects the behavior of conduction electrons and alters the values of the Hall constant. The galvanomagnetic effects are closely related to the behavior of the electron components of the outer atomic shells. The state of the outer shell may be studied with high accuracy on the basis of these effects. The character of the chemical bond between various atoms of metallic alloys may thus be explained. The authors prepared alloys from pure titanium and aluminum with an Al content up to 40 wt% by two methods: 1) powder metallurgy by pressing and sintering in vacuo at 600-1000°C for 50-100 hr. 2) melting in the arc furnace with a wear-resistant tungsten electrode. The current collectors were triangular and knife-shaped at the point of contact with the specimen. They glided along the polished lateral faces of the sample by means of micrometer screws. Test method and measuring apparatus are described in Ref. 11 (N. V. Grum-Grzhimaylo, ZhNKh, 2, no. 7, 1958). Table 1 contains the resultant mean

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Metallic compounds in the range of ...

values of the Hall constant of the alloys. On the basis of these data, the authors plotted a diagram of this constant as a function of the composition (Fig. 1). Two (a and b) jumps from the linear variation of the Hall constant to another linear variation are seen. These jumps correspond to: a) the compound  $Ti_6Al$  with 14.3 atom% (9 wt%) of aluminum; b) the compound  $Ti_3Al$  with 25 atom% (16 wt%) Al. The sintered and the

cast alloys showed the same behavior. The cast alloys were subjected to homogenizing heat treatment (between 600 and 900°C for 200-350 hr) immediately after measuring the Hall constant. The limited range of the solid  $\alpha$ -solution offers considerable difficulties in the presence of two metallic compounds if the order of variations of the Hall constant has to be determined. This determination requires an increased precision of measurement which was achieved by the device applied here. The authors conclude from their data that the solid aluminum solutions in  $\alpha$ -titanium exhibit a complicated kind of interaction owing to the existence of the two compounds  $Ti_6Al$  and  $Ti_3Al$  which apparently have a hexagonal lattice. X

They might result from solid solutions and correspond to compounds of the Kurnakov type (Ref. 12: I. I. Kornilov, Izv. AN SSSR, OKhN, 1957,

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21568

S/020/61/137/003/018/030  
B103/B208

Metallic compounds in the range of ...

no, 4,.395). The diagrams of the Hall constant in the range of the  $\gamma$ -phase in alloys with 46.16 atom% (33wt%) to 53.85 atom% (40.0 wt%) aluminum show a sharp discontinuity at 50.0 atom% (36.02 wt%).aluminum. It corresponds to the compound TiAl which was detected by other methods of physicochemical analysis. The equilibrium of the compounds  $Ti_6Al$ ,  $Ti_3Al$ , TiAl and the proof of their existence in the phase diagram depend on the kinetics and on the conditions of their formation which have to be further studied. The appearance of these compounds in the system Ti - Al increases the heat resistance of the alloys and rapidly decreases their plasticity at an aluminum content of more than 7-8 wt%. There are 1 figure, 1 table, and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: M. Hansen, Constitution of binary alloys, N.Y. London, 1958, p. 139 (Ref. 1).

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR  
(Institute of Metallurgy imeni A. A. Baykov of the Academy  
of Sciences USSR)

Card 4/8



KALEYS, O.Yu.; VOLKOVA, M.E.

Complexometric determination of sulfates and anal'gin. Apt.  
delo 9 no.2:45-48 Mr-Ap '60. (MIRA 13:6)

1. Iz Kontrol'no-analiticheskoy laboratorii goroda TSsis  
Glavnogo aptechnogo upravleniya Latvyskoy SSR.  
(SULFATES) (NOVALGIN)

VOLKOVA, M. F., Cand of Agricultural Sci -- (diss) "Harvestability of  
Types of Esparsette and Their Influence on the ~~Harvest~~ Nutritional  
and Structural Status of the Soils in Kolkhozes of Shchebekinskiy Rayon  
Belgorodskaya Oblast," Voronezh, 1959, 19 pp (Voronezh Agricultural  
Institute) (KL, 5-60, 128)

M

USSR/Cultivated Plants - Grains

Abs Jour : Ref Zhur Biol., No 12, 1958, 53564

Author : Volkova, M.G.

Inst : Penza Agricultural Institute

Title : The Effect of Mineral Fertilizers on the Drought Resistance of Barley.

Orig Pub : Sb. tr. Penzensk, s.-kh. in-ta, 1956, byul. 1, 141-157

Abstract : On the basis of a 2-year accumulation of data on experiments with barley of the Pioneer and Viner varieties in vegetal vessels, it was found that with normal soil moisture content, the application of NPK ( $\frac{1}{2}$  dose prior to sowing and  $\frac{1}{2}$  dose before spike formation) increases the yield in comparison with the placement of a full dose of NPK prior to sowing. Drought before spike formation and during the period of spike formation affects the grain

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USSR/Cultivated Plants - Grains

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53564

yield on sprouts emerging during germination more than on the main shoot. Supplementary feeding with N and P before the drought, during the shooting period increases the drought resistance in comparison with NPK applied before sowing. Upon introduction of a half dose of P before sowing and of a full dose before drought, during the period of stem formation (before spike formation), - the plants, as in the absence of fertilizer, - display signs of xerophytic structure and are characterized by low water content, as well as by a higher osmotic pressure at the beginning of the development. At the same time they are distinguished by greater drought resistance. -- N.G. Buyakovich

Card 2/2

COUNTRY : USSR  
 CATEGORY : Cultivated Plants. General Problems. M  
 ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10848  
 AUTHOR : ~~Volkova, M. G.~~  
 INST. : Penza Agricultural Institute.  
 TITLE : The Influence of Growth Substances on Seed Germination  
 and on the Growth of Some Agricultural Plants.  
 ORIG. PUB. : Sb. tr. Penzensk. s.-kh. in-ta, 1958, vyp. 2, 257-274  
 ABSTRACT : A study of the effect of the treatment of the seeds of  
 various agricultural plants with heteroauxin and 2,4-D  
 in different concentrations on seed germination, growth  
 and yield, and also a study of their influence on the  
 viscosity of the protoplasm were conducted in 1954 and  
 1955 at Penza Agricultural Institute. The effect of  
 growth substances was observed on lupine, sunflower, bean,  
 corn and millet. The treatment of millet seeds increases  
 the vigor of germination and the yield. Heteroauxin and

CARD: 1/2

COUNTRY :  
CATEGORY :  
ABS. JOUR. : RZhBiol., No. 1959, No. 10848  
AUTHOR :  
INST. :  
TITLE :  
ORIG. PUB. :  
ABSTRACT : 2,4-D have a favorable effect on corn. Beans have a  
fluctuating tolerance of the effect of heteroauxin but  
lupine and sunflower tolerate it in rather high concentra-  
tions. The growth substances have a profound effect on  
the protoplasm of the cells. The correlation between the  
increase in the viscosity of the protoplasm and the water-  
holding ability of the plants is not always observed. —  
Yo. I. Saks

CARD: 2/2

USSR / Cultivated Plants. Fodder Grasses and Edible Roots. M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24923

Author : Zhuravlev, Ye. M.; Volkova, M. G.; Mezhenko, I. V.; Ivanovskiy, V. M.

Inst : Penzen Agricultural Institute

Title : Contents of Pigments, Carbohydrates and Proteins in Fodder Grasses, Depending Upon the Phase of Plant Development

Orig Pub : Sb. tr. Penzensk. s.-kh. in-ta, 1958, vyp 2, 403-424

Abstract : Specimens of fresh grass - leguminous (alfalfa, esparcet, vetch) and cereal (awnless brome grass, mohar, sudan grass, oats) were taken in various phases of plant development. The weight relation between leaves and stalks,

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USSR / Cultivated Plants. Fodder Grasses and Edible  
Roots.

M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24923

water content, pigments (chlorophyll, carotene, xanthophyll) and carbohydrates (monosaccharides, saccharose, starch) were determined in the leaves and the stalks. Qualitative analyses of the leaves for protein and starch content were conducted. As the plants develop, the percent content of their pigments is decreased, the tissues' water capacity is lowered, the reciprocal relation between the weight of leaves and stalks changes in favor of increasing the relative share of the stalks. There were 4-18 times fewer pigments in the stalks than in the leaves, this difference growing larger as the plants developed. The correlation between the quantities of xanthophyll and

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USSR / Cultivated Plants. Fodder Grasses and Edible  
Roots.

M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24923

carotene in the leaves fluctuated from 5 to 2.2; between the quantity of chlorophyll and the sum of carotenes in the legumes - from 9.3 to 12.8; in the cereals - from 5.9 to 11.7; between the quantities of chlorophyll and carotene in legumes from 25.1 to 38.7, in the cereals - from 16.4 to 35.6. On a background of full mineral fertilization, oats in the phase of lactic maturity had a higher content of pigments than the controls; of chlorophyll and carotene by 63% and xanthophyll by 47%. Starch content in the leguminous stalks fluctuated from 25% to 35% in relation to the sum of carbohydrates, and the starch in the cereal stalks completely or

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USSR / Cultivated Plants. Fodder Grasses and Edible  
Roots.

M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24923

almost completely was absent. The total quantity of soluble carbohydrates in the stalks were considerably higher than in the leaves. The maximum content of starch was observed more often in 14 hours. Starch and protein content was usually found in reverse correlation. In the stalks and leaves of oats, starch was almost absent; the soluble carbohydrates, on the whole, are represented by saccharose. The task was carried out in 1956. -- G. N. Chernov

Card 4/4

DONSKAYA, Ye.V., kand. tekhn. nauk; SHIROKOVA, V.N., kand. khim. nauk;  
VOLKOVA, M.G., laborant; Prinsipali uchastiye: KUL'TER, V.Ya.,  
laborant; KOZHEVNIKOVA, V.N., laborant

Trilonometric method of determining the sulfate ion in paper.  
Trudy LTITSBP no.10:80-84 '62. (MIRA 16:8)

(Paper--Analysis)

(Sulfates)

VOLKOVA, N.G. - kand.biol.nauk

Using the balsam *Impatiens sultanii* Hook. in studying botany.  
Biol. v shkole no.5:81 S-S '58. (MIRA 11:11)

1. Pensenskiy sel'skokhozyaystvennyy institut.  
(Botany--Study and teaching) (Touch-me-nots)

Volkova, M. G.

✓ 1621. Determination of sulphuric anhydride in Portland cement by means of a cationite. R. V. Donskaya and M. G. Volkova (Inorg. and Anal. Chem. Dept., V. H. Stroganov Leningrad Tech. Inst.). *Zhur. Prikl. Khim.*, 1966, 29 (10), 1583-1599. — To determine  $SO_3^{2-}$  in Portland cement the sample (0.5 to 0.7 g) is moistened with 3 ml of water and heated for 10 min. with 3 ml of conc. HCl on a boiling-water bath. Freshly prepared gelatin soln.

(3 ml of 1% soln.) is stirred in, 50 ml of hot water is added and the soln. is filtered through a paper into a column of a cationite prepared by placing 50 g of Wofatit R or other cationite in a 100-ml burette over a layer of glass wool, introducing water to one-third of the height of the column, then washing with warm (50°) 10% HCl soln. until Fe is completely removed, and finally washing out the acid with water. The residue on the paper is washed with hot water and the liquid issuing from the column is analysed for  $SO_3^{2-}$  as usual. It is confirmed that silica is completely removed by the use of gelatin soln. The method shortens the time required for determining  $SO_3^{2-}$  from 4 hr. to 40 min.

G. S. SMITH

VOLKOVA, M. G.

DONSKAYA, Ye.V.; VOLKOVA, M.G.

Determining sulfuric anhydride in portland cement by the  
cationite method. Zhur.prikl.khim. 29 no.10:1598-1599 0 '56.  
(MIRA 10:10)

1.Kafedra neorganicheskoy i analiticheskoy khimii Leningradskogo  
tekhnologicheskogo instituta im. V.M. Molotova.  
(Sulfuric anhydride) (Portland cement)

YOLKOV, M.G.

VOLKOVA, M.G.; ZHURAVLEV, Yo.M.

Effect of gibberellic acid on various farm crops. Fiziol. rast.  
10 no.2:231-234 Mr-Ap '63. (MIRA 16:5)

1. Penza Agricultural Institute.  
(Gibberellic acid) (Field crops)



VOLKOVA, N. I.

VOLKOVA, N. I. -- "Clinico-Ophthalmic-Dynamometric Observations During Different Stages of Hypertension Involving Various Forms of Damage to Eye Grounds." \*(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Min Public Health USSR, First Leningrad Medical Inst Leningrad Academician I. P. Pavlov, Chair of Eye Diseases, Leningrad, 1955.

SO: Knizhnaya Letopis' No. 31, 30 July 1955.

\*For the Degree of Candidate in Medical Sciences.

VOIKOVA, M.I.

Novocaine block in hypertension with modifications of the fundus  
oculi. Vest. oft. 34 no.2:21-27 Mr-Apr '55. (MIRA 8:7)

1. Iz glaznoy kliniki (dir. prof. L.A. Dymshits) i Leningradskogo  
meditsinskogo instituta imeni akad. I.P. Pavlova, (Nauchnyy rukovo-  
ditel' deyatvitel'nyy chlen AMN SSSR, zasluzhennyy deyatel' nauk  
prof. V.V. Chirkovskiy).

(HYPERTENSION, therapy,

procaine nerve block, hypertension with changes in fundus  
oculi)

(PROCAINE, therapeutic use,

hypertension with changes in fundus oculi, nerve block)

(ANESTHESIA, REGIONAL,

procaine block in hypertension with changes in fundus  
oculi)

(EYE,

fundus in hypertension, pathol. changes, ther., procaine  
nerve block)

2-2

Composition of the Khiliny apatite, M. I. VOLKOVA and E. N. Mikhaylov (Comp. rend. Acad. Sci. U.R.S.S., 1969, 25, 129-132).—Complete analyses and descriptions of twelve samples from different deposits are given. O. D. S.

ASB-51.4 METALLURGICAL LITERATURE CLASSIFICATION

## 5(2)

Институт экономики и социальнического развития

Элементы элементарной логики, анализ, прикладные  
Элементы; Извлечение, Анализ и Применение) Москва, Изд-во АН СССР,  
1976. 311 с. 2,200 экз. Издано.

Sup. Eds.: B. I. Ryabchikov, Professor, Editorial Board; I. P. Alimov, Corresponding Member, USSR Academy of Sciences, I. M. Kozlovskiy, Doctor of Chemical Sciences, M. V. Kozlovskiy, Candidate of Technical Sciences, V. I. Kuznetsov, Doctor of Chemical Sciences, M. M. Kuznetsov, Candidate of Chemical Sciences, and Yu. S. Ryzhenkov, Candidate of Chemical Sciences; Eds. of Publishing Houses: D. N. Trifonov and T. G. Lavij, Tech. Eds.; B. G. Mikhel'son, Math. Eds.

**PURPOSE:** This book is intended for scientists, chemists, teachers and students of higher educational institutions, chemical and industrial engineers and other persons concerned with the extraction, preparation, use, or study of rare earth elements.

**NOTES.** This collection contains reports presented at the June 1966 Conference on New Earth Elements at the Institute of Geochemistry and Analytical Chemistry, U.S.S.R. Academy of Sciences. The articles treat chemical methods of separating new earth elements, methods of processing rare earth ores, ion exchange chromatography, chemical analysis, and some industrial applications of rare earths. Aside from contributing authors, the editors mention the following Soviet scientists who are studying rare earth elements: rare earth deposits, extraction methods, and the preparation of oxides and salts: Barygin, Melnikov, Shkudarenko, Melikov, Kiselevskiy, Gerasimov, Zakharenko, and others. In addition, A. G. Chel'vov first obtained the majority of new earth elements, and V. I. Kravtsov first obtained the molecular compounds of these elements and determined their specific properties. References are given at the end of each article.

### Use of Computers:

29	Gradenkovskiy, V. I. (Institute of Geochemistry and Analytical Chemistry [Inst. V. I. Vernadskiy AS USSR], Geochemistry of New Earth Elements
30	Wulfsberg, E. I. (Volgogradskiy Ilimskiy S. M. Kirova AS USSR [Volgogradskiy Nauchnoye Akademiye of Sciences Inst. S. M. Kirova USSR], Reasons for Fluctuation in the Specific Weight of Rubbery Alloys
31	Moisevich, I. M., and P. S. Petlin (Sverdlov [State New Metals Scientific Research Institute], Separation of Cerium from Rare Earth Elements and Obtaining It in the Pure State
32	Belikov, S. V., and O. P. Kobzarevskiy (State New Metals Scientific Research Institute), Application of Heavy Salts for the Separation of New Earth Elements into Subgroups and Preparation of High Percentage Concentrates of Some Elements of the Titrin Subgroup
33	Belikov, S. V., and O. P. Kobzarevskiy, Application of Complex-forming Substances for the Separation of New Earth Elements by Fractional Precipitation of Heavy Salts

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